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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,486	02/13/2002	Byung Hee Hong	DE-1342	8775

7590

10/01/2003

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EXAMINER

WONG, EDNA

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,486

Applicant(s)

HONG ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5, 6 and 8 is/are allowed.
- 6) ☒ Claim(s) 9 is/are rejected.
- 7) ☒ Claim(s) 1-4 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

This is in response to the Amendment dated September 2, 2003. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

Claim Objections

Claim 2 has been objected to because of minor informalities.

The objection of claim 2 has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 112

Claims 3 and 8 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 3 and 8 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 102

I. Claim 4 has been rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-246551.

The rejection of claim 4 under 35 U.S.C. 102(b) as being anticipated by JP 11-246551 has been withdrawn in view of Applicants' amendment.

II. Claim **9** has been rejected under 35 U.S.C. 102(b) as being anticipated by **Moskovits et al.** (US Patent No. 5,581,091).

The rejection of claim 9 under 35 U.S.C. 102(b) as being anticipated by Moskovits et al. is as applied in the Office Action dated May 29, 2003 and incorporated herein. The rejection has been maintained for the following reasons.

Applicants state that the Moskovits patent discloses micropores having a diameter of about 1 to 500 nm. In response, the diameter as presently claimed (1 nm or less) overlaps with the diameter disclosed by Moskovits (about 1 to 500 nm). Thus, the overlapping diameter of 1 nm taught by Moskovits anticipates the diameter of 1 nm as presently claimed.

Claim Rejections - 35 USC § 103

Claims **1 and 3** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 11-246551**.

The rejection of claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over JP 11-246551 has been withdrawn in view of Applicants' amendment.

Response to Amendment

Claim Objections

Claims **1 and 7** are objected to because of the following informalities:

Claim 1

line 4, " " should be amended to -- °C --.

Claim 7

line 2, it is suggested that the words -- the group consisting of -- be inserted after the word "from".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim **9** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants' specification (page 5, line 29) discloses "Metal nanowires having a diameter of about 1 nm were prepared previously". A diameter of 0.02 nm is not about 1 nm. Thus, the claim contains new matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by **Lieber et al.**

(US Patent Application No. 2002/0117659 A1).

Lieber teaches a nanowire having a diameter of 1 nm or less (= from 0.5 nanometers to 200 nanometers) [page 3, ¶ [0063]].

As to the limitation of “synthesized by the method according to claim 5”, the invention defined in a product by process claim is a product, not a process. *In re Bridgeford* 679, 149 USPQ 55 (CCPA 1966).

The patentability of a product by process claim does not depend on its method of production and where the examiner has found a similar product, the burden rests with the applicant to prove that that product is patentably distinct. See *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi et al.*, 218 USPQ 289; *In re Pilkington*, 162 USPQ 145. “The lack of physical description in a product-by-process claim makes the determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not the process that must be established. We are therefore of the opinion

that when the prior art discloses a product which reasonably appears to be identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 173 USPQ 685,688 (CCPA 1972).

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Claims **1-4** define over the prior art of record because the prior art does not teach or suggest a method for synthesizing a calix[4]hydroquinone (CHQ) organic nanotube comprising the steps of dissolving and allowing as presently claimed.

Claims **5-8** define over the prior art of record because the prior art does not teach or suggest a method for synthesizing a nanowire, which comprises the steps of adding and allowing presently claimed.

The prior art does not contain any language that teaches or suggests the above. *JP 11-246551* uses a calixarene as a starting material. The nanotube formed from the calixarene is by covalent bonding of the hydroxyl groups of calixarene, whereas, the nanotube formed from CHQ is by a hydrogen bond. Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a prima facie

case of obviousness cannot be established.

Claims 1-4 and 7 would be allowable if rewritten or amended to overcome the claim objection(s) set forth in this Office action.

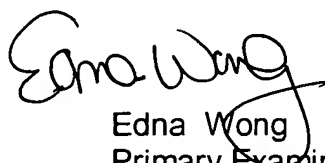
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1495.


Edna Wong
Primary Examiner
Art Unit 1753

EW
September 29, 2003